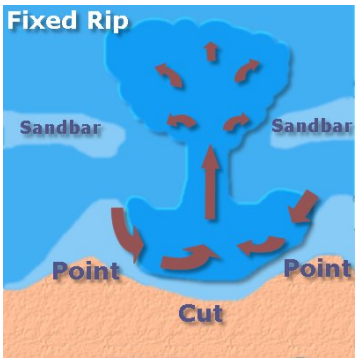
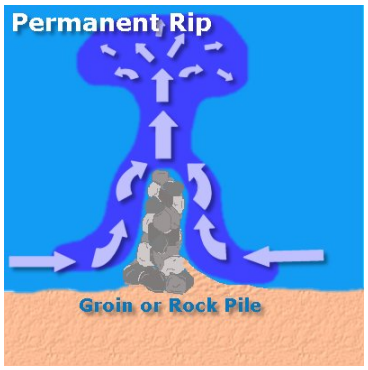
The Four Rip Current Types

There are a few types of rip currents have been documented, and each type can occur along the beaches of the Carolinas. The rip current types are: **Fixed**, **Permanent**, **Flash**, and **Traveling**.



Fixed rip currents typically occur along beaches where there are no man-made or natural structures such as piers, rock outcrops, or jetties. Typically, there is an area in the surf where the water is deeper than the surrounding water. They are found in one general location most times and are strongly influenced by surf conditions, as well as the shape of the coast and sandbar structure. A good place to find this type of rip is along an intermediate point of a cut (cusp) between two points along the beach. These types of rip currents will only remain fixed in one location until the near shore bathymetry changes. These changes are usually a result of weather or seasonal changes of the beach.

The **Flash** rip current is a very short duration (less than 10 minutes) current, which is enhanced by heavy surf. This is especially true when large swells from distant hurricanes increase the amount of wave energy and wave volume dispersed onto the beaches. Flash rip currents are extremely unpredictable, because of the temporary conditions they produce, as well as variable locations they develop.



Permanent rip currents are nearly stationary seaward currents that are focused on structures, thus can persist almost year round. Structures such as jetties, groins, or large drainage outflows will aid the formation of permanent rip currents. An example of a permanent rip current can be seen at the Fort Fisher revetment. Fishing piers are additional structures which focus rip currents. In this case, the rip is found aligned along or under the pier.

The last of the rip current types is called a **Traveling** rip. This rip current is most common when there is a sufficient long shore current (a current that moves parallel to the beach) present to push the rip away from the location it originally developed. As the rip current migrates away from its source area it weakens. If wave and tide conditions continue to support rip current development, then a new one will form in the source area and begin to move down the beach until weakening. This process can continue throughout the day if conditions are just right.

Most times these rip currents are weak. However, if the wave energy coming into the beach is significant and tide levels are just right, then any of these rip currents can become strong and dangerous.